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## PUBLICATIONS OF THE PLANETARY BIOLOGY PROGRAM FOR 1975

### A SPECIAL BIBLIOGRAPHY

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FOR OFFICE OF SPACE SCIENCE

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## INTRODUCTION

The Planetary Biology Program of the National Aeronautics and Space Administration is the first and only integrated program to methodically investigate the planetary events which may have been responsible for, or related to, the origin, evolution, and distribution of life in the universe. Research supported by this program is divided into the seven areas listed below together with a statement of the principal objective of each research area.

Chemical Evolution - To understand how biologically significant organic molecules are synthesized under conditions presumed to have existed on the primitive earth before the advent of life or which may presently exist on other planets.

Organic Geochemistry - To analyze terrestrial and extraterrestrial material for organic molecules, biological structures, and other clues to the origin(s) of life on this and other planets.

Life Detection - To develop and implement techniques to search for, detect, and characterize life and life-related molecules on this and other planets.

Biological Adaptation - To understand the adaptive mechanisms used by terrestrial organisms to survive and/or grow in environmental extremes approaching those on other planets.

Bioinstrumentation - To design, develop, and test prototype spaceflight instruments which will be used to detect and characterize life and life-related molecules on the surface and in the atmosphere of other planets.

Planetary Environments - To develop analytical techniques which measure environmental parameters on other planets which are relevant to the search for life.

Origin of Life - To identify the sequence of events leading from the putative complex organic milieu in the primordial terrestrial oceans to the origin of the first living systems.

The arrangement of references in this bibliography follows the division of research described above. Articles are listed alphabetically by author under the research area with which they are most closely related. Only those publications which resulted from research supported by the Planetary Biology Program and which bear a 1975 publication date have been included. Abstracts and theses are not included because of the preliminary and abbreviated nature of the former and the frequent difficulty of obtaining the latter.

Our intent in compiling this bibliography is twofold. First, we would like to provide the scientific community with an annual listing, beginning with 1975, of current publications resulting from research pursued under the auspices of

NASA's Planetary Biology Program. Secondly, we hope to stimulate the exchange of information and ideas among scientists working in the different areas of the program. To facilitate the exchange process, we have identified, by asterisk, the author of each publication who is presently participating in the program. Current addresses for all principal investigators are given in the appendix.

We wish to thank all the participants of the Planetary Biology Program for their cooperative response to our request for an enumeration of their 1975 publications. We also wish to thank F. D. Bradley for assistance in the preparation of this bibliography.

## Chemical Evolution

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Bioinstrumentation

NONE

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